Claims

1. A process for forming a metal plating film, comprising the steps of:

preparing a base element having a convex curved surface;

depositing a metal plating film onto the convex curved surface of

the base element; and

detaching the metal plating film from the base element to obtain the metal plating film.

- 2. The process for forming a metal plating film according to Claim 1, wherein the base element has a cylindrical surface, and in a step for depositing the metal plating film onto the surface of the base element, a part of the surface of the base element is immersed in a plating solution in a plating bath, and an electric field is applied between the base element and the plating bath, while the base element turns on its axis.
- 3. The process for forming a metal plating film according to Claim 1 or 2, wherein a mask layer for controlling a deposition area of the metal plating film is formed on the surface of the base element, and the mask layer comprises diamond-like carbon (DLC) or graphite-like carbon (GLC).
- 4. The process for forming a metal plating film according to any one of Claim 1 to 3, wherein the metal plating film includes

non-conductive micro-particles therein.

- 5. A process for manufacturing an electronic component, comprising:
- a step A for depositing a metal plating film onto a surface of a base element;
- a step B for detaching the metal plating film from the base element, and for mutually attaching the metal plating film with a dielectric sheet; and
- a step C for obtaining an electronic component having a portion with a conductor layer attached on a dielectric layer by heat treating the dielectric sheet having the formed metal plating film thereon, at a temperature lower than a melting point of a metal forming the metal plating film.
- 6. The process for manufacturing an electronic component according to Claim 5, wherein the step B comprises a step for detaching the metal plating film from the base element and transferring to a resin film, and a step for attaching a dielectric sheet onto the metal plating film transferred on the resin film.
- 7. The process for manufacturing an electronic component according to Claim 5, wherein the step B comprises a step for detaching the metal plating film from the base element and transferring to a resin film, and a step for re-transferring, onto

a dielectric sheet, the metal plating film transferred onto the resin film.

- 8. The process for manufacturing an electronic component according to Claim 5, wherein the step B comprises a step for detaching the metal plating film from the base element, and for directly transferring onto a dielectric sheet of a resin film having the dielectric sheet formed thereon.
- 9. The process for manufacturing an electronic component according to Claim 5, wherein the step B comprises a step for detaching the metal plating film from the base element and transferring to a resin film, a step for attaching a dielectric slurry so as to cover the metal plating film transferred to the resin film, and a step for heating and drying the resin film having the dielectric slurry attached thereto.
- 10. The process for manufacturing an electronic component according to Claim 5, wherein a peak temperature in heat treatment in the step C is higher than a recrystallizing temperature of the metal forming the metal plating film.
- 11. The process for manufacturing an electronic component according to Claim 5, wherein the step B comprises a step for selectively attaching the dielectric sheet to a region without

existence of the metal plating film of the resin film, by pressing the dielectric sheet having a thickness almost equal to a thickness of the metal plating film onto both of the region with existence of the metal plating film and a region without existence in a surface having the metal plating film formed on the resin film, after detaching of the metal plating film from the base element and transferring to the resin film.

- 12. The process for manufacturing an electronic component according to any one of Claim 5 to Claim 11, wherein the base element has a cylindrical surface, and in the process A, a part of the surface of the base element is immersed in a plating solution in a plating bath, and an electric field is applied between the base element and the plating bath, while the base element turns on its axis.
- 13. The process for manufacturing an electronic component according to any one of Claim 5 to Claim 12, wherein a mask layer for controlling a deposition area of the metal plating film is formed on the surface of the base element, and the mask layer comprises diamond-like carbon (DLC) or graphite-like carbon (GLC).
- 14. The process for manufacturing an electronic component according to any one of Claim 5 to Claim 13, wherein the plating solution comprises non-conductive micro-particles, and in the process A the metal plating film comprising non-conductive

micro-particles is formed by attachment of the non-conductive micro-particles to a metal component deposited on the surface of the base element.

- 15. An apparatus for forming a plating film comprising:
 a plating bath having a plating solution introduced therein;
 a rotatable base element having a cylindrical surface, the base
 element being disposed so that a portion of a surface thereof may
 be immersed in the plating solution;
 an electric field applying means for applying electric field
 between the base element and the plating bath; and
 a transfer means for pressing a metal plating film onto a surface
 of the base element elevated out from the plating solution, by
 pressing a transfer recipient material to the base element, in a
 downstream side of a rotative direction of the base element.
- 16. The apparatus for forming a plating film according to Claim 15, wherein the transfer recipient material is a resin film, further comprising a second transfer means for attaching a dielectric sheet onto the metal plating film transferred on the resin film.
- 17. The apparatus for forming a plating film according to Claim 15, wherein the transfer recipient material is a resin film, further comprising a third transfer means for transferring the metal plating film transferred on the resin film onto a dielectric sheet.

- 18. The apparatus for forming a plating film according to Claim 15, wherein the transfer recipient material is a resin film having a dielectric sheet formed thereon.
- 19. The apparatus for forming a plating film according to Claim 15, wherein the transfer recipient material is a resin film, further comprising a slurry attaching means for attaching a dielectric slurry so as to cover the metal plating film transferred to the resin film, and a heating and drying means for heating and drying the resin film having the dielectric slurry attached thereon.
- 20. The apparatus for forming a plating film according to any one of Claim 15 to Claim 19, wherein a surface of the base element is sectioned into a plurality of blocks detachably supported to a core part of the base element.
- 21. The apparatus for forming a plating film according to any one of Claim 15 to Claim 20, wherein in the plating bath, there are provided a first electric potential area maintained in a comparatively positive electric potential with respect to the base element for depositing a metal plating film onto a surface of the base element, and a second electric potential area for re-dissolving, into the plating solution, a surface portion of the metal plating film deposited onto the surface of the base element, the second electric potential area being disposed in a downstream

in a rotative direction of the base element of the first electric potential area, and being maintained in a comparatively negative electric potential with respect to the base element.

22. The apparatus for forming a plating film according to Claim 21, wherein the first potential area and the second electric potential area are electrically isolated by interposition of an insulating member.